

### **REMARKS**

Upon entry of this Amendment, claims 21-52 remain pending and under current examination.

In the Office Action,<sup>1</sup> the Examiner:

(a) objected to the Abstract;

(b) rejected claims 21-26, 31-33, and 35-42 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,854,802 to Jin et al. ("Jin");

(c) rejected claims 37-39 under 35 U.S.C. § 103(a) as being unpatentable over Jin in view of U.S. Patent No. 5,808,764 to Frigo et al. ("Frigo"); and

(d) objected to claims 27-30 as being dependent upon a rejected base claim, but indicated they would allowable if rewritten in independent form including all the limitations of the base claim and any intervening claims.

At the outset, Applicants note that the Examiner did not address claim 34 in the Office Action. Applicants traverse the objections and rejections for the following reasons.

#### **Amendments to the Abstract:**

Applicants have amended the Abstract to place it in proper U.S. form by reducing the number of words below 150. Accordingly, Applicants request withdrawal of the objection.

#### **Rejection of Claims 21-26, 31-33, and 35-42 under 35 U.S.C. § 102(b):**

Applicants request reconsideration and withdrawal of the rejection of claims 21-26, 31-33, and 35-42 under 35 U.S.C. § 102(b) as being anticipated by Jin.

In order to properly establish anticipation under 35 U.S.C. § 102, the Federal Circuit has held that "[a] claim is anticipated only if each and every element as set forth in the claim is

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<sup>1</sup> The Office Action may contain statements characterizing the related art, case law, and claims. Regardless of whether any such statements are specifically identified herein, Applicants decline to automatically subscribe to any statements in the Office Action.

found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Furthermore, “[t]he identical invention must be shown in as complete detail as is contained in the ... claim.” *Richardson v. Suzuki Motor Co.*, 868 F.2d 1126, 1236, 9 U.S.P.Q.2d 1913, 1920 (Fed. Cir. 1989). *See also* M.P.E.P. § 2131.

Jin does not disclose each and every element of Applicants’ claimed invention, despite the Examiner’s allegations. Specifically, Jin does not disclose at least Applicants’ claimed “an input for said at least one signal radiation at frequency  $\omega_s$ ,” “an optical resonator comprising a non-linear material,” “an optical resonator ... resonating at the pump, signal and converted frequencies  $\omega_p$ ,  $\omega_s$  and  $\omega_g$ ,” and “wherein by propagating through said structure, the pump and signal radiation generate said converted radiation by non-linear interaction within each of said optical resonators” (claim 21, similar recitation in claims 35, 37, 40, and 42).

Jin instead discloses a device 5 for converting a first laser radiation at a first wavelength into a second laser radiation at a second wavelength through non-linear optical interaction in wavelength converting means 24. *See* col. 6, lines 58-66. The first laser radiation is emitted by laser medium 22 in response to pumping radiation 12. *See* col. 6, lines 39-40. In Jin’s device, non-linear interaction takes place only in the wavelength converting means 24 (second resonant cavity), with the laser medium 22 (first cavity) being provided only for emitting the first laser radiation. Moreover, only the first radiation emitted by laser medium 22 participates in the non-linear interaction to generate the second laser radiation at the second wavelength, through non-linear optical conversion techniques. Finally, the pumping radiation 12 excites the laser medium 22 to provide the first laser radiation through laser technology which is different from non-linear optical conversion techniques.

Since Jin does not disclose each and every element of independent claims 21, 35, 37<sup>2</sup>, 40, and 42, Jin does not anticipate Applicants' claims 21, 35, 37, 40, and 42 under 35 U.S.C. § 102(b). Accordingly, claims 21, 35, 37, 40, and 42 are allowable over Jin. Dependent claims 22-26, 31-33, 36, 38, 39, and 41 are also allowable at least by virtue of their respective dependence from base claim 21, 35, 37, 40, or 42. Accordingly, Applicants respectfully request withdrawal of the 35 U.S.C. § 102(b) rejection of claims 21-26, 31-33, and 35-42.

**Rejection of Claims 37-39 under 35 U.S.C. § 103(a):**

Applicants request reconsideration and withdrawal of the rejection of claims 37-39 under 35 U.S.C. § 103(a) as being unpatentable over Jin in view of Frigo. A *prima facie* case of obviousness has not been established.

To establish a *prima facie* case of obviousness, the prior art reference (or references when combined) must teach or suggest all the claim limitations. See M.P.E.P. § 2142, 8th Ed., Rev. 5 (August 2006). Moreover, "in formulating a rejection under 35 U.S.C. § 103(a) based upon a combination of prior art elements, it remains necessary to identify the reason why a person of ordinary skill in the art would have combined the prior art elements in the manner claimed." *USPTO Memorandum* from Margaret A. Focarino, Deputy Commissioner for Patent Operations, May 3, 2007, page 2. "[T]he analysis supporting a rejection ... should be made explicit" and it is "important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the [prior art] elements in the manner claimed." *Id.* (citing *KSR Int'l Co. v. Teleflex, Inc.*, No. 04-1350 (U.S. Apr. 30, 2007)).

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<sup>2</sup> Incidentally, the 35 U.S.C. § 102(b) rejection of claim 37 is also overcome by the Examiner's own admission in the subsequent 35 U.S.C. § 103(a) rejection of claim 37, where the Examiner admits that "Jin et al does not disclose the use of device 5 within an optical network node, and further comprising such elements as a plurality of output ports coupled to an input port." Office Action, pp. 5-6.

Regarding independent claim 37, the Examiner admits that “Jin et al does not disclose the use of device 5 within an optical network node, and further comprising such elements as a plurality of output ports coupled to an input port.” Office Action, pp. 5-6. The Examiner then applies Frigo as allegedly teaching “a multiple star network comprising nodes 30 and 30” capable of accepting an input signal, converting said input signal into first and/or second order modes, and outputting said first and/or second modes to a plurality of optical fibers.” Office Action, p. 6.

A *prima facie* case of obviousness has not been established for at least the reason that Jin and Frigo, taken alone or in combination, fail to teach or suggest each and every element recited in independent claim 37. As discussed above in regard to the § 102(b) rejection, Jin fails to teach each and every element of independent claim 21, and independent claim 37, while of different scope, recites elements similar to those recited in claim 21. Frigo also fails to teach at least each and every element of independent claim 37.

Therefore, claim 37 is also allowable over the combination of Jin and Frigo, and dependent claims 38 and 39 are allowable due to their dependence from base claim 37. Accordingly, Applicants respectfully request withdrawal of the 35 U.S.C. § 103(a) rejection of claims 37-39.

**Regarding the Allowable Subject Matter:**

The Examiner indicated that claims 27-30 contain allowable subject matter, and “would be allowable if rewritten in independent form including all the limitations of the base claim and any intervening claims.” See Office Action, pp. 6-7. Since independent claim 21 is allowable for the reasons presented above, dependent claims 27-30 are also allowable at least by virtue of their dependence from claim 21.

**Conclusion:**

In view of the foregoing, Applicants request reconsideration of the application and withdrawal of the objections and rejections. Pending claims 21-52 are in condition for allowance, and Applicants request a favorable action.

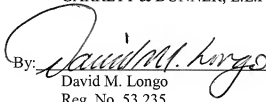
If there are any remaining issues or misunderstandings, Applicants request the Examiner telephone the undersigned representative to discuss them.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

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Dated: June 25, 2007

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